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December 21, 1999

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Mr. Brion Travis
Chairman
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Re: Report 99-F-52

Gentlemen:

Pursuant to the State Comptroller's authority as set forth in Article V, Section 1 of the State Constitution and Article II, Section 8 of the State Finance Law, we have reviewed the actions taken by officials of the Office for Technology and selected State agencies as of December 3, 1999, to implement the recommendations contained in our audit report, *New York's Preparation for the Year 2000: A Second Look* (Report 98-S-21). Our report, which was issued on April 5, 1999, reviewed New York State's preparation for the Year 2000. In addition, we have followed up on the matters of concern which we identified during a series of reviews that we conducted during 1999 to assess the Year 2000 efforts performed by State agencies (various "99-Y" reports) for systems designated by OFT as mission critical.

Background

The essence of the Year 2000 (Y2K) problem is that many computer systems record dates in a format that does not include the century. Therefore, such systems cannot distinguish the year

2000 from the year 1900. Unless such systems are corrected to recognize the year 2000, some are likely to produce errors or fail in the very near future.

New York State began a coordinated approach to addressing the Year 2000 problem in April 1996 when the Governor's Task Force on Information Resource Management, now the New York State Office for Technology (OFT), was assigned the task of coordinating State agency efforts to achieve Y2K compliance. While agencies are responsible for resolving their Y2K problems, the OFT coordinates with agencies and public authorities to reduce duplicative efforts, to identify common problems and generalized solutions and to monitor progress in completing Y2K compliance projects. The OFT views its role as that of a facilitator of statewide compliance efforts. Therefore, OFT maintains a collaborative, rather than a control, relationship with agencies. The OFT also provides Year 2000 support to quasi-state agencies and to local governments. However, OFT does not monitor the Y2K compliance progress of a number of governmental organizations in the State, such as the State University of New York and the Unified Court System. In July 1997, Governor Pataki identified Year 2000 compliance as the State's number one technology priority.

On October 14, 1997 we issued our first audit report (Report 96-S-84) on the State's Y2K problem. That audit examined the extent to which agencies had become aware of the Y2K problem and had established project teams and project plans to correct the problem. That audit also evaluated the effectiveness of the OFT's oversight and monitoring of statewide Y2K compliance efforts. That audit determined that most State agencies were in the early phases of their Year 2000 projects and concluded that there was a real risk that agency services would be disrupted unless much more effort and resources were devoted to addressing the Y2K problem.

After our first audit, several additional Y2K high priority concerns emerged. These included testing compliant systems, data exchanges, embedded systems, contingency planning, public utility infrastructure, legal liability and a comprehensive definition for "Y2K Compliant."

Summary Conclusions

In our prior audit (Report 98-S-21), we determined that additional efforts and resources needed to be committed to address high priority concerns. We indicated that OFT should expand its monitoring efforts for the critical phases of testing, data exchanges, contingency plans and other Y2K areas to ensure State services continue without interruption. We recommended that OFT determine the status of systems' data exchange capability, verify agency-reported information, and advise agencies to assess potential liabilities associated with Y2K issues. The audit also identified some specific issues which needed to be addressed at the agencies we visited as part of the audit. In addition, our follow up on 24 matters of concern pertaining to 22 mission critical systems at 14 State agencies covered by our "99-Y" review reports showed that all of the matters of concerns have been addressed by the agencies. The concerns generally pertained to a lack of contingency plans prepared by the agencies, systems scheduled for compliance later than the third quarter of 1999, and inadequate test documentation.

Summary of Status of Prior Audit Recommendations

Of the 11 prior audit recommendations from Report 98-S-21, OFT officials have implemented nine recommendations and partially implemented two recommendations. The 13 other recommendations made to the five agencies we visited have been implemented.

Follow-up Observations

Recommendation 1

Require agencies to identify in their status reporting whether any critical Y2K steps have been omitted or are not likely to be performed, and report any revised estimates to complete their Y2K work.

Status - Partially Implemented

Agency Action - Through quarterly reports from agencies, OFT has been monitoring the total work effort required to make mission critical systems and high priority systems Year 2000 complaint. OFT has not required agencies to report on the specific work to be done or omitted. Rather, agencies must consider these factors in reporting to OFT on the work done and remaining work effort needed. OFT provided guidelines to State agencies on the completion of the quarterly status reports, including how to determine and report the percentage of work completed and remaining. OFT officials then review the percentages reported by agencies to monitor the progress of the agencies in remediating each specific application.

Recommendation 2

On a sample basis, verify the accuracy of agency reported Y2K completion information for high priority and critical systems.

Status - Implemented

Agency Action - OFT conducted Risk Assessment Team Reports at the following 6 State agencies: Department of Health, Office of Temporary and Disability Assistance, State Insurance Fund, State Police, Lottery, and Department of Criminal Justice Services. These reports served to verify the status of the agencies' remediation efforts.

OFT contracted with Century Services, Inc., to perform the Independent Verification & Validation of the State's Top 40 Priority Systems which are maintained within 20 agencies. These reviews provide assurance that these systems are Year 2000 compliant and that any shortcomings are made known to State senior management.

Recommendation 3

Require agencies to report whether and to what extent data exchanges have been made Y2K ready for high priority and critical systems that are otherwise defined as compliant.

Status - Implemented

Agency Action - OFT has required that, effective January 1999 agencies include the status of data exchanges in the quarterly status report. The remediation status of each data exchange for each priority system must be separately reported.

Recommendation 4

Require agencies to report whether and to what extent contingency plans have been prepared for high priority and critical systems.

Status - Implemented

Agency Action - OFT has monitored the preparation of agencies' contingency plans. A total of 46 agencies have prepared contingency plans based on guidelines provided by OFT and each agency has provided a copy of its plan to the State Emergency Management Office (SEMO).

Recommendation 5

Continue to monitor PSC efforts to oversee the Y2K compliance activities and status of public utilities. Be prepared to work in conjunction with the Governor, PSC and SEMO to promptly formulate necessary strategies to protect the public should there be indications of a lack of Y2K readiness on the part of public utilities.

Status - Implemented

Agency Action - OFT has worked closely with the Public Service Commission to monitor the status Y2K readiness of the State's utility companies. In its March 1999 status report meeting of agency Year 2000 coordinators, OFT included presentations by the Public Service Commission with respect to the readiness of the State's utilities. Officials have informally monitored the Public Service Commission's efforts in overseeing the Year 2000 efforts of the State's utilities through ongoing meetings.

Recommendation 6

Provide guidance to agencies on assessments of potential legal liabilities that may arise from the result of Y2K failure of high priority and critical systems, and monitor agencies activities in these regards.

Status - Implemented

Agency Action - OFT has worked with the Attorney General's Office on legal liability issues that may arise because of the Year 2000 problem and provided guidance to agencies. In January 1998, issues related to contracts, export restrictions, software confidentiality, license restrictions, and force majeure (act of god) clauses were discussed, and a presentation on the Analysis of Legal Issues Involving Potential Liability in Implementing Year 2000 Compliance was provided.

Recommendation 7

Follow up with agencies to obtain explanations about the progress and problems associated with the testing phase of their Y2K projects.

Status - Implemented

Agency Action - OFT officials indicate that review and monitoring of problems has occurred in conjunction with the quarterly reports submitted by the agencies. Issues such as overtime waivers, hiring exemptions for programmers, and alternative funding mechanisms were brought to OFT's attention through the problems encountered by agencies. In addition, agencies have reported specific problems and issues encountered with the testing of applications to OFT. For example, agencies, quarterly reports to OFT have identified problems related to meeting test schedules. OFT officials indicate that they informally followed up with these agencies to address the specific concerns raised and ensured that appropriate testing took place as planned.

Recommendation 8

Follow up on the Y2K project of the Department of Correctional Services to determine if any additional actions are needed because of the lack of a formal Y2K plan and the weaknesses in internal control procedures for testing remediated systems.

Status - Implemented

Agency Action - An independent validation and verification of the Department of Correctional Services's Top 40 system was conducted. The review indicates that the consultant has confidence in the Department's process, methodology, and results; but there is a conspicuous absence of documentation to support the Department's test efforts and results. The consultant reported that it was able to verify that the Department had accomplished its Year 2000 goals. The review recommends that the Department should complete extensive documentation of the remaining testing.

Recommendation 9

Require agencies to report to OFT on the status of their Y2K testing progress for critical and high priority systems.

Status - Partially Implemented

Agency Action - OFT officials believe that their function is not to monitor and verify the information each quarter, but instead to focus on the final results achieved. They indicate that whether testing is behind or on schedule is not important as long as the total remediation project is successfully completed. As such, they do not believe that it would be prudent to require agencies to report the status of intermediate stages, such as specific testing, but rather to simply report on the total project progress. OFT's guidelines to agencies indicate that testing will take place when the agency reports 50 percent to less than 100 percent work completed. OFT officials indicate that they are able to monitor the progress each agency is making in its testing procedures through the estimated work remaining, as reported by the agencies.

Recommendation 10

Provide for the independent validation or verification of the status of agency Y2K testing based upon risk factors that consider the importance of the systems and the effectiveness of established testing controls.

Status - Implemented

Agency Action - OFT contracted with Century Services, Inc., to perform the Independent Verification & Validation of the State's Top 40 Priority Systems which are maintained by 20 agencies.

Recommendation 11

Focus additional attention and emphasis on monitoring agency actions to establish Y2K contingency plans and to make data exchanges and embedded systems Y2K compliant.

Status - Implemented

Agency Action - OFT has required each agency to report data exchanges and embedded systems/equipment in the quarterly reports. Data exchanges are reported in the quarterly reports starting with the 3rd quarter ended October 1997 and then every other quarter until 1999 when they are reported every quarter. The remediation status of each data exchange for each priority system is reported separately. At the conclusion of our audit, in December 1998, OFT reported that 24 percent of the mission critical data exchanges were

compliant. In September 1999, OFT indicated that 99 percent of the mission critical data exchanges were compliant. Embedded systems are reported in the quarterly reports from OFT starting with the 7th quarter ended October 1998. In September 1999, OFT reported that about 72 percent of the priority embedded systems were compliant. OFT has monitored the preparation and submittal of agency contingency plans, and has indicated that as of October 1999, 46 agencies have filed their contingency plans with the State Emergency Management Office.

Recommendation 12

Department of Taxation and Finance

Expedite efforts to make data exchanges and embedded systems Y2K compliant.

Status - Implemented

Agency Action - As of September 1999, the Department indicates that all 74 data exchanges for its Top 40 applications are compliant. It also indicates that 72 of the 74 data exchanges for High Priority applications are compliant. In addition, four of its five priority embedded systems are compliant.

Recommendation 13

Department of Taxation and Finance

Develop OFT required high-level contingency plans and establish business continuity plans for important business and service functions that may be at risk should systems experience Y2K failures.

Status - Implemented

Agency Action - The Department has developed a contingency plan and has submitted it to SEMO. In addition, the two table-top contingency exercises have been attended by Department officials.

Recommendation 14

Department Of Motor Vehicles

Document the results of Y2K testing activities performed by the Quality Assurance Unit.

Status - Implemented

Agency Action - Department officials provided documentation of the results of Year 2000 testing activities performed by the Quality Assurance Unit. In addition, Century Services performed the Independent Verification & Validation of the Department's Top 40 Priority System, the License and Core Teleprocessing System. Century concluded that overall the Department has conducted an effective effort towards obtaining Y2K compliance for this system and there are minimal risks in the system's ability to operate successfully into the year 2000 and beyond.

Recommendation 15

Department Of Motor Vehicles

Expedite efforts to make data exchanges and embedded systems Y2K compliant.

Status - Implemented

Agency Action - Department officials indicate that four critical embedded systems are Year 2000 compliant, and it's ten Top Priority data exchanges are compliant. Currently, the Department is in the process of ensuring that their noncritical data exchanges are compliant. Officials have sent electronic data exchange confirmation forms to external suppliers of electronic data.

Recommendation 16

Department Of Motor Vehicles

Develop OFT required high-level contingency plans and establish business continuity plans for important business and service functions that may be at risk should systems experience Y2K failures.

Status - Implemented

Agency Action - The Department has developed a contingency plan and has submitted it to SEMO. In addition, the two table-top contingency exercises have been attended by Department officials.

Recommendation 17

State Education Department

Establish deadlines for completing testing on high priority and critical systems. Construct a schedule and identify and provide necessary resources for completing testing by the deadline.

Status - Implemented

Agency Action - The State Education Department has developed a formal test plan with documented deadlines for completing testing, and is monitoring the plan to ensure that all of its applications are remediated and tested as scheduled.

Recommendation 18

State Education Department

Expedite efforts to make data exchanges and embedded systems Y2K compliant.

Status - Implemented

Agency Action - According to OFT's 10th quarterly report, there are no noncompliant data exchanges for the State Education Department's Top 40 systems. Officials report only one noncompliant data exchange for its High Priority systems. This exchange is awaiting testing. The Department has conducted independent reviews of its embedded systems, and is taking appropriate actions to ensure their Year 2000 compliance.

Recommendation 19

State Education Department

Establish contingency plans for important business and service functions that may be at risk should systems experience Y2K failures.

Status - Implemented

Agency Action - The State Education Department has developed a contingency plan and has submitted it to SEMO. In addition, the two table-top contingency exercises have been attended by State Education Department officials.

Recommendation 20

Division of Parole

Document the design, scheduling and results of Y2K tests.

Status - Implemented

Agency Action - Division of Parole officials have documented the design, scheduling and results of Year 2000 tests. In addition, Century Services conducted the Independent Verification and Validation of the Division Parole's Violations System (Top 40 Priority System). Century found that overall, the Division's Y2K readiness project for the Violations System was adequate. During the Year 2000 readiness review, Century determined that the Parole

Division needs to provide some additional documentation to verify the work already accomplished and how the remaining work will be completed. The report states that subsequent to Century's Interim Report, the Division had reportedly taken action on this.

Recommendation 21

Division of Parole

Expedite efforts to make data exchanges and embedded systems Y2K compliant.

Status - Implemented

Agency Action - The Division of Parole has developed an inventory of its embedded systems and data exchanges. The Division has not identified any embedded systems as mission critical. One of the two data exchanges for the Top 40 system remains noncompliant.

Recommendation 22

Division of Parole

Develop OFT required high-level contingency plans and establish business continuity plans for important business and service functions that may be at risk should systems experience Y2K failures.

Status - Implemented

Agency Action - The Division of Parole has developed a contingency plan and submitted it to SEMO.

Recommendation 23

Department Of Correctional Services

Work with OFT to determine whether any additional actions are needed to complete the Department's Y2K project in a timely and effective manner.

Status - Implemented

Agency Action - The Department of Correctional Services has remediated its systems for compliance with Year 2000 issues, completed testing of those systems, and has completed independent tests of its processes.

Recommendation 24

Department Of Correctional Services

Establish internal controls for aspects of the Y2K project concerning testing, data exchanges, embedded systems and contingency planning.

Status - Implemented

Agency Action - The Department has completed system testing for all systems but two, which were scheduled for routine replacement in the fall of 1999, and has prepared appropriate test plans for its forward date testing. The Department has also identified each data exchange with its systems and determined the risks associated with each, with failure management strategies developed for the more critical exchanges. Each embedded system at the Department has been identified and determinations have been made about whether these are mission critical or not. The Department obtained compliance letters from each software vendor. For mission critical systems, the Department has developed a Failure Management Strategy, which identifies what will be done to operate the system in case of failure. The Department began a concentrated effort to develop its contingency plan in January 1999. The contingency plan was finalized in October 1999, and delivered to SEMO in November 1999.

Major contributors to this report were Brian Reilly, Walter Irving, Michael Farrar, Linda Giovannone and Traci Wimet.

We would appreciate your response to this report as soon as possible, indicating any actions planned or taken to address any unresolved matters discussed in this report. We also thank the management and staff of the Office for Technology, the Division of Parole, the Department of Correctional Services, the State Education Department, the Department of Taxation and Finance, and the Department of Motor Vehicles for the courtesies and cooperation extended to our auditors during this review.

Very truly yours,

Jerry Barber
Audit Director

cc: Charles Conaway